

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B23K26/24 B23K26/26 B23K37/04 B23K37/047 B21C47/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B23K B21C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 04, 31 August 2000 (2000-08-31) & JP 2000 000612 A (NIPPON STEEL CORP), 7 January 2000 (2000-01-07) abstract -----	4
Y	DE 40 22 062 C (THYSSEN STAHL AG) 14 November 1991 (1991-11-14) column 4, line 30 - column 5, line 31; figures 1-3 -----	1,2
Y	DE 40 22 062 C (THYSSEN STAHL AG) 14 November 1991 (1991-11-14) column 4, line 30 - column 5, line 31; figures 1-3 -----	1,2
A	column 4, line 30 - column 5, line 31; figures 1-3 -----	3
A	DE 198 52 462 A (J.W. OHG) 25 May 2000 (2000-05-25) column 4, lines 8-36; figures 1,2a-c,3a-c ----- -/-	1,2



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Date of the actual completion of the international search

15 December 2004

Date of mailing of the international search report

22/12/2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 299 358 B (THYSSEN STAHL AG) 2 January 1992 (1992-01-02) cited in the application the whole document -----	1-4
A	DE 93 14 720 U (THYSSEN INDUSTRIE) 2 December 1993 (1993-12-02) cited in the application the whole document -----	1-4
A	US 3 109 914 A (T.A. MCCOY) 5 November 1963 (1963-11-05) the whole document -----	1-4

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